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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,567	07/05/2006	Nicholas Karyambas		7958

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EXAMINER
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NGUYEN, HOANG M

ART UNIT	PAPER NUMBER
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3748

MAIL DATE	DELIVERY MODE
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03/09/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/585,567	<b>Applicant(s)</b> KARYAMBAS, NICHOLAS	
	<b>Examiner</b> Hoang M. Nguyen	<b>Art Unit</b> 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

Applicant's amendment dated June 1, 2009, has been fully considered.

Applicant amended the claim to include different dimension 20 micrometer. The 112 rejection regarding new matter has been withdrawn.

Applicant argued his invention is operative. The Examiner strongly disagrees. On page 2, lines 7-18, Applicant clearly explains his invention is a closed system with only one heat exchanger (6) heated by ambient air, and that system forms a refrigeration system. This is clearly a violation of 2nd law of thermodynamic. A perpetual motion machine of the second kind is a machine which spontaneously converts thermal energy into mechanical work. When the thermal energy is equivalent to the work done, this does not violate the law of conservation of energy. However it does violate the more subtle second law of thermodynamics, (see also entropy). Such a machine is different from real heat engines (such as car engines), which always involve a transfer of heat from a hotter reservoir to a colder one, the latter being warmed up in the process. The signature of a perpetual motion machine of the second kind is that there is only one heat reservoir involved, which is being spontaneously cooled without involving a transfer of heat to a cooler reservoir. This conversion of heat into useful work, without any side effect, is impossible, as stated by the second law of thermodynamics.

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Applicant argued the applied references do not disclose the angle and the dimension. Please note US 5316568 clearly disclose the angle of the holes 12. The dimensions of the holes can be elected by a person having ordinary skill in the art as noted in the previous rejection.

For the reasons set forth above, the rejections have been maintained and this Office Action has been made FINAL.

Claim 2 is rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility.

Although the skilled person could produce a device having the features of claim 2, the description does not disclose the device in a manner which would enable it to work as described, as such functioning would seem to be in contravention of well-established physical laws. In the present case, the second law of thermodynamics would seem to be violated by such a device, as it is alleged that such a device continuously produces energy and provides refrigeration without needing any external heat source, apparently a Perpetual Motion Machine of the Second Kind. It is therefore doubtful that such a device could be used as described, leading to the subject-matter of claim 2 is inoperative.

Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not

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described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As noted above in the 101 rejection, the second law of thermodynamics would seem to be violated by such a device, as it is alleged that such a device continuously produces energy and provides refrigeration without needing any external heat source, apparently a Perpetual Motion Machine of the Second Kind. Therefore, it's unclear how the system is working.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites many figure, page and line numbers in the body of the claims. This is improper. It's okay if Applicant explains his invention using figure/page/line numbers in his remarked section of the amendment, but not in the claim.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 5316568 (Brown) in view of WO 94/20741 (Kim). Brown discloses a device for converting thermal energy into kinetic energy (see figures 18 and 20), said device using a rarefied gas (col.14, lines 3-15) as the working fluid and comprising: a vessel divided

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by a region (92) containing microscopic slots (12) (col.4, lines 48-50 the fact that the pore openings can be rectangular or oval in shape allows them to be interpreted as slots) with sizes comparable to the mean free path of the molecules (column 2, lines 26-28) of the gas, said microscopic slots having diverging inner surfaces (col.4, lines 41-44) and forming slots grouped together in small parallel modules (see figure 2), said microscopic slots having a molecular layer adsorbed upon said inner walls (col.6, lines 34-45); a gas turbine (96,104) which performs adiabatic expansion on the gas; a heat exchanger (106) located downstream of the gas turbine (96,104) to provide heat energy to the gas flow. The subject-matter of claim 1 therefore differs from this known device in that the heat exchanger transfers heat from the ambient air to the working fluid. Kim discloses the provision of a heat exchanger to transfer heat energy from the ambient air to the working gas flow is well-known in the field of closed circuit turbines. The skilled person would therefore regard the use of such a heat exchanger in the device according to claim 1 as obvious and a matter of normal design procedure. Regarding the length 20  $\mu\text{m}$ , it would have been obvious to elect the size of the vessel in the specific dimension as claimed for the purpose of producing appropriate energy output.

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 3670500 (Schultz). Schultz discloses a device for converting thermal energy into kinetic energy (see figures 1, 3-7), said device using a rarefied gas as the working fluid and comprising: a vessel 27, 46, 57, divided by a region containing microscopic slots

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(note slots of the membranes) with sizes comparable to the mean free path of the molecules of the gas, said microscopic slots having diverging inner surfaces and forming slots grouped together in small parallel modules, said microscopic slots having a molecular layer adsorbed upon said inner walls; a gas turbine (34, 45) which performs adiabatic expansion on the gas; a heat exchanger (38, 44) located downstream of the gas turbine to provide heat energy to the gas flow, (note column 3, lines 15-47 for the concept of isothermal compressor, and using ambient air for heat transfer purposes). Schultz does not disclose the length 20  $\mu\text{m}$ . However, it would have been obvious to elect the size of the vessel in the specific dimension as claimed for the purpose of producing appropriate energy output.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner Nguyen whose telephone number is (571) 272-4861. The examiner can normally be reached on Tuesday--Friday from 12:30 AM to 10:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on 571-272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Hoang M Nguyen/  
Primary Examiner, Art Unit 3748

HOANG NGUYEN  
PRIMARY EXAMINER  
ART UNIT 3748

Hoang Minh Nguyen  
3/9/2010